

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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**PCT**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **08 JULY 2005 (08.07.2005)**

Applicant's or agent's file reference  
FE251544

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/KR2005/000561**

International filing date (day/month/year)

**28 FEBRUARY 2005 (28.02.2005)**

Priority date(day/month/year)

28 FEBRUARY 2004 (28.02.2004)

International Patent Classification (IPC) or both national classification and IPC

**IPC7 G01V 8/20**

Applicant

**CESCO CO., Ltd. et al**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. I Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1 - 6	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1 - 6	NO
Industrial applicability (IA)	Claims	1 - 6	YES
	Claims		NO

**2. Citations and explanations :**

**I. Prior art**

Reference is made to the following documents:

D1: US 6,239,423 B1 (KIYOSHI NAMA; KEISUKE MURAKAMI) 29 May 2001

D2: JP 2000-321054 A (TOSHIBA CORP.) 24 Nov. 2000

D3: JP 10213673 A (TAKENAKA ENG. KK.) 11 Aug. 1998

D4: JP 2003-227873 A (SUMITOMO OSAKA CEMENT CO., LTD.) 15 Aug. 2003

D5: US 5,883,383 A (RASVAN N. DRAGNE) 16 Mar. 1999

D1 relates to an area sensor including a light emitter having a plurality of light emitting devices in order to detect a moving object.

D2 relates to a vehicle detector having an optical detector which is attached to an arm for detecting a passing vehicle.

D3 relates to a human body detector having a detector which is installed on a ceiling for detecting a moving human body.

D4 relates to a monitoring system having a distance sensor on a wall for monitoring an object.

D5 relates to a seed counting apparatus having LEDs and a photodiode for counting a seed.

**II. Regarding Novelty**

The subject matter of independent claims 1, 3, 5, and 6 relates to a rat detection system having a sensor.

None of the documents D1 to D4 disclose a rat detecting function. Therefore, independent claims 1, 3, 5, and 6 and dependent claims 2 and 4 are considered to be novel (Art. 33(2) PCT).

(Continued on the supplemental sheet.)

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**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 4 refers to claim 2. However, claim 4 should refer to claim 3, since what is claimed in claim 4 is exactly the same as what is claimed in claim 2.

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

Box V.

III. Regarding Inventive Step

1. Concerning Independent Claims 1, 3, 5, 6

Independent claim 1 relates to a rat detecting apparatus comprising plurality sensors which are installed on a stick at a corner. The plurality sensors on the stick of claim 1 are considered to be equivalent to the light emitting devices (21) and the light receiving devices (31, 34) in the area sensor (10) of D1.

Independent claim 3 relates to a rat detecting apparatus comprising plurality sensors which are installed on a stick projecting from a wall. The multiple sensors on the stick of claim 3 are considered to be equivalent to the detectors (1, 2) attached to an arm (12) according to D2.

Independent claim 5 relates to a rat detecting apparatus comprising plurality sensors which are installed on a dome of a ceiling. The multiple sensors on the dome of claim 5 are considered to be equivalent to the twin sensors (11, 12) of the detector (1) on a ceiling (2) according to D3.

Independent claim 6 relates to a rat detecting apparatus comprising a sensor which is attached to a wall. The sensor on a wall is considered to be equivalent to the distance sensor (11) on a wall (4) according to D4.

Claims 1, 3, 5, and 6 differ from D1 to D4 in that claims 1, 3, 5, and 6 relate to an apparatus for detecting a rat, whereas D1 to D4 relates to an apparatus for detecting an object, a human body, and a vehicle which are bigger than a rat. However, it would be rendered obvious to a person skilled in the art to derive the apparatus of claims 1, 3, 5, and 6 from the teachings of D1 to D4, respectively, since it does not need a special technical feature to detect a small object such as a rat instead of a big one.

(Continued on the next page.)

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

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**2. Concerning Dependent Claims 2 and 4**

Dependent claims 2 and 4, which refer to claims 1 and 3 respectively (see Box VIII), specify that the stick comprises unit modules having a sensor. However, it would be rendered obvious to a person skilled in the art to derive the unit modules of claims 2 and 4 from the teaching of D1, since D1 describes extension units of a light receiver (71) which is similar to the unit modules of claims 2 and 4.

**3. Therefore, the subject matter of claims 1-6 does not involve an inventive step (Art. 33(3) PCT).**

**III. Industrial Applicability**

The subject matter of claims 1 to 6 is considered to be industrially applicable (Art. 33(4) PCT).